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COVID-19 in children with Chronic Kidney Disease: findings from the UK Renal Registry

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Dear Editor,

As Munro and Faust point out, there appears a stark contrast in the case and mortality rates of SARS-CoV-2 infection among children compared with the adult population[1]. Whether infection in children is generally mild or asymptomatic which goes undetected or children are less susceptible to contracting the infection, is unclear until screening programmes are introduced. What also remains uncertain is the risk of severe infection for children with significant underlying health concerns, including those with chronic kidney disease (CKD). The few studies reported have so far shown reassuringly low numbers and complication rates in children with coexisting diseases such as cancer and liver transplant recipients[2,3]. The NHS England COVID-19 service evaluation (<https://www.rcpch.ac.uk/resources/covid-19-service-evaluation-audit-care-needs-children-admitted-hospital-england>) has to date, identified 220 confirmed cases in England of whom 44.4% of cases have coexisting disease; 2 children are reported to have CKD.

At the UK Renal Registry (UKRR) and in collaboration with the British Association for Paediatric Nephrology, we have established an ongoing weekly COVID-19 surveillance system specifically for children with CKD. Lead clinicians from all 13 UK paediatric nephrology centres are asked to actively report cases with a confirmed positive COVID-19 antigen test: data including NHS number, date of birth and whether the child is on kidney replacement therapy (KRT: dialysis or kidney transplant) are requested. Leads also inform the UKRR if no cases are identified. Data are checked and validated, with the NHS Demographics Batch Service used to capture date of death for patients in England and Wales, the devolved nations for which this service is available. The UKRR is part of the Renal Association and collects, reports, and analyses high-quality clinical data on children and adults with CKD. A legal basis to collect and analyse data is provided under section 251 support for research and audit.

Between 26 March and 15 July 2020, five UK children with CKD who tested positive with SARS-CoV-2 infection were reported; none have died. Cases were identified across the UK and included children

with stage IV CKD and stage V requiring KRT. The majority (4/5) were male with a median age of 11 years (interquartile range 8-12 years). While such low numbers preclude further analysis of risk factors, these data support the observation that infection in children with chronic coexisting disease is fortunately uncommon. It is likely that this figure represents children unwell enough to attend hospital for testing, however it is encouraging that none have experienced adverse outcomes to date. In addition to weekly surveillance reporting, linkage of UKRR data for prevalent children in England with advanced CKD (stages 4, 5 and on KRT) to Public Health England and Hospital Episode Statistics (HES) data in the near future will enable us to accurately determine infection prevalence rates as well as comprehensively review infection-related hospitalisation episodes.

In light of these findings, alongside those from international colleagues[4], the BAPN has relaxed shielding criteria for children with kidney disease, details of which can be found on the Renal Association website: <https://renal.org/covid-19/>. This work, along with emerging evidence from other specialties, has enabled the Royal College of Paediatrics & Child Health to revise recommendations[5] which have since been adopted by the UK Government.

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